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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,117	10/10/2003	Keiichi Teshirogi	243740US2	8228

22850 7590 07/28/2005

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EXAMINER

DESIR, PIERRE LOUIS

ART UNIT PAPER NUMBER

2681

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/682,117

Applicant(s)

TESHIROGI, KEIICHI

Examiner

Pierre-Louis Desir

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date Jan 06, 2004
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 6-11, 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 6-11, 17 the phrase "in a certain case" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Note: for the process of examination, the phrases "in a certain case" will be omitted.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa, U.S. Patent No. 5862476, in view of Onodera et al. (Onodera), Pub. No. US 20020052997.

Regarding claim 1, Hasegawa discloses base station which continuously transmits control information to at least one communication terminal in an area in order to perform a

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communication control of the communication terminal (i.e., the base station control equipment connected to the base station transmits and receives a variety of control information with the mobile station equipment located in the radio zone) (see col. 4, lines 22-28), comprising: a control information generating part for generating control information (i.e., the control part 83) (see col. 4, lines 9-11); a communications part for continuously transmitting the control information generated by the control information generating part to the communication terminal in the area (i.e., base station control equipment) (see col. 4, lines 22-28).

Although Hasegawa discloses a base station comprising a control information control part, which controls the communication part (i.e., shelf control part 60-1) (see col. 1, lines 46-53), Hasegawa does not specifically disclose that the control information control part (i.e., shelf control part) is for making the communication terminal in the area unable to recognize the control information by controlling at least one of the control information generating part and the communications part.

However, Onodera discloses a communication system (see abstract). When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile radiotelephone is isolated from the one radio base station (see page 1, paragraph 9). Thus, when the signal is interrupted,

the mobile radiotelephone is isolated from the one radio base station, which will cause the mobile radiotelephone unable to recognize the control information from the one radio base station, which results in making the mobile radiotelephone to communicate with the other radio base station through control signals of the other radio base station.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication by using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 2, Hasegawa discloses base station (see claim 1 rejection) wherein the control information control part performs an analysis of the communication control of the communication terminal in the area (i.e., when any control information from the mobile station equipment is received, the base-station control equipment 56 analyzes the control information, and processes adaptive to these analysis result of the predetermined plural processes are successively carried out) (see col. 4, lines 28-33).

Although Hasegawa discloses a base station wherein specific analysis result is obtained from the analysis as described above, Hasegawa does not specifically disclose a base station wherein when a specific analysis result is obtained, makes the communication terminal in the area unable to recognize the control information by controlling at least one of the control information generating part and the communications part.

However, Onodera discloses a communication system (see abstract). When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication

channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile radiotelephone is isolated from the one radio base station (see page 1, paragraph 9). Thus, when the signal is interrupted, the mobile radiotelephone is isolated from the one radio base station, which will cause the mobile radiotelephone unable to recognize the control information from the one radio base station, which results in making the mobile radiotelephone to communicate with the other radio base station through control signals of the other radio base station.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication by using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 3, Hasegawa discloses a base station (see claim 1 rejection) wherein the base station is connected to a base station control apparatus (i.e., the base station control equipment 56 is connected to the base station) (see col. 4, lines 22-23).

Although Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station wherein the communications part can receive a control instruction which instructs the control information control part to control the control information, from the base station control apparatus, and the control information control part, in a case of the communications part receiving the control instruction from the base station control apparatus,

makes the communication terminal in the area unable to recognize the control information, by controlling at least one of the control information generating part and the communications part.

However, Onodera discloses a communication system wherein the system control section 43 demands the communication processor section for circuit controller 44 to issue the "Call setup request" command by using the telephone number and the channel number as a parameter and waits for receiving a "Call proceeding" information from the circuit controller 10. The communication processor section for circuit controller 44 composes a "Call setup request" command and transmits it to the circuit controller 10 on the network 70 (see page 5, paragraph 33). In addition, Onodera also discloses When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile radiotelephone is isolated from the one radio base station (see page 1, paragraph 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to provide base station equipment in which a difference between transmission performance of up and down link radio transmissions lines may be reduced (Hasegawa col. 5, lines 9-12).

Regarding claim 4, Hasegawa discloses a base station as described (see claim 2 rejection) further comprising a communication channel setting part for managing at least one communication channel which can be set for the communication terminal in the area (i.e., based on managing information in the base station equipment whether or not the mobile station equipment is within the own radio zone, one of the up-link stand-by permission level and the up-link stand-by degradation level may be selected and set) (see col. 17, lines 60-64), receiving a setting request for a communication channel from the communication terminal in the area which received the control information (see col. 4, lines 22-27), and setting the communication channel for the communication terminal in the area having sent the setting request for the communication channel (i.e., the base station control equipment receives and transmits a variety of control information, including call requests, selection calling command, with the mobile station equipment located in the radio zone) (see col. 4, lines 22-27), wherein the control information control part analyzes a setting situation of the communication channel for the communication terminal in the area (i.e., when any control information from the mobile station equipment is received, the base station control equipment analyzes the control information, and processes adaptive to these analysis results of the predetermined plural processes are successively carried out) (see col. 4, lines 28-33).

Although, Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station wherein in a case of a number of vacant communication channels which are not set for the communication terminal in the area becoming equal to or less than a certain number, makes the communication terminal in the area unable to recognize the

control information, by controlling at least one of the control information generating part and the communications part.

However, Onodera discloses a communication system wherein in a case of a number of vacant communication channels which are not set for the communication terminal in the area becoming equal to or less than a certain number, makes the communication terminal in the area unable to recognize the control information, by controlling at least one of the control information generating part and the communications part (see paragraphs 9, and 33-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication by using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 5, Hasegawa discloses a base station as described (see claim 2 rejection) further comprising a communication channel setting part for managing at least one communication channel which can be set for the communication terminal in the area (i.e., based on managing information in the base station equipment whether or not the mobile station equipment is within the own radio zone, one of the up-link stand-by permission level and the up-link stand-by degradation level may be selected and set) (see col. 17, lines 60-64), receiving a setting request for a communication channel from the communication terminal in the area which received the control information (see col. 4, lines 22-27), and setting the communication channel for the communication terminal in the area having sent the setting request for the communication channel (i.e., the base station control equipment receives and transmits a variety of control

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information, including call requests, selection calling command, with the mobile station equipment located in the radio zone) (see col. 4, lines 22-27).

Although, Hasegawa discloses a base station wherein the control information control part analyzes a setting situation of the communication channel for the communication terminal in the area (i.e., when any control information from the mobile station equipment is received, the base station control equipment analyzes the control information, and processes adaptive to these analysis results of the predetermined plural processes are successively carried out) (see col. 4, lines 28-33), Hasegawa does not specifically disclose a base station wherein the control information control part analyzes communication traffic of another communication terminal in the area for which the communication channel has been set, and in a case of the communication traffic of the another communication terminal in the area for which the communication channel has been set becoming equal to or greater than a specific level, makes the communication terminal in the area unable to recognize the control information, by controlling at least one of the control information generating part and the communications part.

However, Onodera discloses a communication system comprising plural radio base stations wherein the call state monitor section 1014 has a function of monitoring usage of communication channels. With assuming that PHS telephones 1041 and 1042 are communicating with the radio base station 1010, that is, 2 communication channels out of 3 communication channels of the radio base station 1010 are occupied and one communication channel is vacant, the call state monitor section 1014 notifies the system control section 1013 that all communication channels or individually assigned slots are occupied and no vacant channel or slot is left, when the PHS telephone 1043 initiated a call and the call state monitor section 1014

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detected that the communication channel is in use. The system control section 1013 directs the CS call control section 1012 to stop transmitting control signals. The CS call control section 1012 stops transmitting control signals after the CS call control section 1012 confirmed that all communication channels were busy (see paragraphs 59 and 61). In addition, Onodera discloses When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile radiotelephone is isolated from the one radio base station (see page 1, paragraph 9). Thus, when the signal is interrupted, the mobile radiotelephone is isolated from the one radio base station, which will cause the mobile radiotelephone unable to recognize the control information from the one radio base station, which results in making the mobile radiotelephone to communicate with the other radio base station through control signals of the other radio base station.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication by using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 6, Hasegawa discloses a base station as described above (see claim 1 rejection).

Although Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station wherein the control information control part gives an instruction to the communications part to stop transmitting the control information, and the communications part stops transmitting the control information to the communication terminal in the area, based on the instruction from the control information control part.

However, Onodera discloses a communication system wherein the control information control part gives an instruction to the communications part to stop transmitting the control information, and the communications part stops transmitting the control information to the communication terminal in the area, based on the instruction from the control information control part (i.e., The system control section 1013 directs the CS call control section 1012 to stop transmitting control signals. The CS call control section 1012 stops transmitting control signals after the CS call control section 1012 confirmed that all communication channels were busy) (see paragraph 59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 7, Hasegawa discloses a base station as described above (see claim 1 rejection).

Although Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station wherein the control information control part gives an instruction to the control information generating part to generate the control information by using a signal

configuration which the communication terminal in the area can not recognize the control information, the control information generating part generates the control information by using the signal configuration which the communication terminal in the area can not recognize the control information, based on the instruction from the control information control part, and the communications part transmits the control information generated by the control information generating part using the signal configuration which the communication terminal in the area can not recognize the control information, to the communication terminal in the area.

However, Onodera discloses a communication system wherein a communication system wherein the system control section 43 demands the communication processor section for circuit controller 44 to issue the "Call setup request" command by using the telephone number and the channel number as a parameter and waits for receiving a "Call proceeding" information from the circuit controller 10. The communication processor section for circuit controller 44 composes a "Call setup request" command and transmits it to the circuit controller 10 on the network 70 (see page 5, paragraph 33). In addition, Onodera also discloses When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile radiotelephone is isolated from the one radio base station (see page 1, paragraph 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to provide base station equipment in which a difference between transmission performance of up and down link radio transmissions lines may be reduced (Hasegawa col. 5, lines 9-12).

Regarding claim 11, Hasegawa discloses a base station which continuously transmits control information to at least one communication terminal in an area in order to perform a communication control of the communication terminal (i.e., the base station control equipment connected to the base station transmits and receives a variety of control information with the mobile station equipment located in the radio zone) (see col. 4, lines 22-28), comprising: a communications part for continuously transmitting the control information generated by the control information generating part to the communication terminal in the area (i.e., base station control equipment) (see col. 4, lines 22-28).

Although Hasegawa discloses a base station comprising a control information control part (i.e., shelf control part 60-1) (see col. 1, lines 46-53), and a stand-by control section, which comprises control a section for waiting for impermissible information transmitted from the base station equipment for proceeding to an out-of-zone state upon receiving the impermissible information (see col. 5, line 66 through col. 6, line 5), Hasegawa does not specifically disclose a base station wherein a control information control part for generating reception-stop-instruction information which instructs the communication terminal in the area to stop receiving the control information, wherein the communications part transmits the reception-stop-instruction

information generated by the control information control part to the communication terminal in the area.

However, Onodera discloses a communication system comprising plural radio base stations and a circuit control device. The circuit control device controls the communication system, wherein the circuit control device recognizes usage of respective communication channels of plural radio base stations and directs the radio base stations to start or to stop transmitting control signals of respective radio base (see paragraph 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication system as to when transmission of control information stops, the mobile radiotelephone can communicate with another radio base station in the same service area (see paragraph 7).

Regarding claim 12, Hasegawa discloses a base station (see claim 11 rejection) wherein the control information control part performs an analysis of the communication control of the communication terminal in the area (i.e., when any control information from the mobile station equipment is received, the base-station control equipment 56 analyzes the control information, and processes adaptive to these analysis result of the predetermined plural processes are successively carried out) (see col. 4, lines 28-33).

Although Hasegawa discloses a base station wherein specific analysis result is obtained from the analysis as described above, Hasegawa does not specifically disclose a base station wherein in a case of obtaining a specific analysis result, generates the reception-stop-instruction information.

However, Onodera discloses a communication system comprising plural radio base stations and a circuit control device. The circuit control device controls the communication system, wherein the circuit control device recognizes usage of respective communication channels of plural radio base stations and directs the radio base stations to start or to stop transmitting control signals of respective radio base (see paragraph 10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication system as to when transmission of control information stops, the mobile radiotelephone can communicate with another radio base station in the same service area (see paragraph 7).

Regarding claim 13, Hasegawa discloses a base station (see claim 11 rejection) wherein the base station is connected to a base station control apparatus (i.e., the base station control equipment 56 is connected to the base station) (see col. 4, lines 22-23).

Although Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station wherein the base station is connected to a base station control apparatus, the communications part can receive a control instruction which instructs the control information control part to generate reception-stop-instruction information, from the base station control apparatus, and the control information control part, in a case of the communications part receiving the control instruction from the base station control apparatus, generates the reception-stop-instruction information.

However, Onodera discloses a communication system wherein the system control section 43 demands the communication processor section for circuit controller 44 to issue the "Call setup

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request" command by using the telephone number and the channel number as a parameter and waits for receiving a "Call proceeding" information from the circuit controller 10. The communication processor section for circuit controller 44 composes a "Call setup request" command and transmits it to the circuit controller 10 on the network 70 (see page 5, paragraph 33). In addition, Onodera also discloses When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile radiotelephone is isolated from the one radio base station (see page 1, paragraph 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to provide base station equipment in which a difference between transmission performance of up and down link radio transmissions lines may be reduced (Hasegawa col. 5, lines 9-12), and to provide a seamless communication system as to when transmission of control information stops, the mobile radiotelephone can communicate with another radio base station in the same service area (see paragraph 7).

Regarding claim 14, Hasegawa discloses a base station as described (see claim 12 rejection) further comprising a communication channel setting part for managing at least one

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communication channel which can be set for the communication terminal in the area (i.e., based on managing information in the base station equipment whether or not the mobile station equipment is within the own radio zone, one of the up-link stand-by permission level and the up-link stand-by degradation level may be selected and set) (see col. 17, lines 60-64), receiving a setting request for a communication channel from the communication terminal in the area which received the control information, and setting the communication channel for the communication terminal in the area having sent the setting request for the communication channel (i.e., the base station control equipment receives and transmits a variety of control information, including call requests, selection calling command, with the mobile station equipment located in the radio zone) (see col. 4, lines 22-27), wherein the control information control part analyzes a setting situation of the communication channel for the communication terminal in the area

Although, Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station comprising generates the reception-stop-instruction information in a case of a number of vacant communication channels which are not set for the communication terminal in the area becoming equal to or less than a certain number.

However, Onodera discloses a communication system comprising generates the reception-stop-instruction information in a case of a number of vacant communication channels which are not set for the communication terminal in the area becoming equal to or less than a certain number (see paragraphs 9, and 33-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing

so would have been to provide a seamless communication by using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 15, Hasegawa discloses a base station as described (see claim 12 rejection) further comprising a communication channel setting part for managing at least one communication channel which can be set for the communication terminal in the area (i.e., based on managing information in the base station equipment whether or not the mobile station equipment is within the own radio zone, one of the up-link stand-by permission level and the up-link stand-by degradation level may be selected and set) (see col. 17, lines 60-64), receiving a setting request for a communication channel from the communication terminal in the area which received the control information (see col. 4, lines 22-27), and setting the communication channel for the communication terminal in the area having sent the setting request for the communication channel (i.e., the base station control equipment receives and transmits a variety of control information, including call requests, selection calling command, with the mobile station equipment located in the radio zone) (see col. 4, lines 22-27).

Although, Hasegawa discloses a base station wherein the control information control part analyzes a setting situation of the communication channel for the communication terminal in the area (i.e., when any control information from the mobile station equipment is received, the base station control equipment analyzes the control information, and processes adaptive to these analysis results of the predetermined plural processes are successively carried out) (see col. 4, lines 28-33), Hasegawa does not specifically disclose a base station wherein the control information control part analyzes communication traffic of another communication terminal in the area for which the communication channel has been set, and in a case of the communication

traffic of the another communication terminal in the area for which the communication channel has been set becoming equal to or greater than a specific level, generates the reception-stop-instruction information.

However, Onodera discloses a communication system comprising plural radio base stations wherein the call state monitor section 1014 has a function of monitoring usage of communication channels. With assuming that PHS telephones 1041 and 1042 are communicating with the radio base station 1010, that is, 2 communication channels out of 3 communication channels of the radio base station 1010 are occupied and one communication channel is vacant, the call state monitor section 1014 notifies the system control section 1013 that all communication channels or individually assigned slots are occupied and no vacant channel or slot is left, when the PHS telephone 1043 initiated a call and the call state monitor section 1014 detected that the communication channel is in use. The system control section 1013 directs the CS call control section 1012 to stop transmitting control signals. The CS call control section 1012 stops transmitting control signals after the CS call control section 1012 confirmed that all communication channels were busy (see paragraphs 59 and 61). In addition, Onodera discloses When all communication channels of one radio base station are busy, wherein the one radio base station is transmitting control signals to a mobile radiotelephone, that is, there is no vacant communication channel at all, the control signals from the one radio base station is interrupted. The mobile radiotelephone can use a vacant communication channel of the other radio base station which has a vacant communication channel, wherein the mobile radiotelephone can communicate with the other radio base station through control signals of the other radio base station so that the control signals from the one radio base station is interrupted and the mobile

radiotelephone is isolated from the one radio base station (see page 1, paragraph 9). Thus, when the signal is interrupted, the mobile radiotelephone is isolated from the one radio base station, which will cause the mobile radiotelephone unable to recognize the control information from the one radio base station, which results in making the mobile radiotelephone to communicate with the other radio base station through control signals of the other radio base station.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication by using a communication channel of another radio base station in a same service area (see paragraph 7).

Regarding claim 16, Hasegawa discloses a base station as described above (see claim 11 rejection).

Although Hasegawa discloses a base station as described, Hasegawa does not specifically disclose a base station wherein the base station transmits the control information to a plurality of communication terminals in the areas, and the communications part, in a case of the control information control part generating the reception-stop-instruction information, transmits the reception-stop-instruction information to a specific communication terminal in the area, and makes the reception-stop-instruction information transmitted from the specific communication terminal in the area to another communication terminal in the area one by one.

However, Onodera discloses a communication system wherein the base station transmits the control information to a plurality of communication terminals in the areas (see paragraphs 59 and 61), and the communications part, in a case of the control information control part generating the reception-stop-instruction information, transmits the reception-stop-instruction information to a

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specific communication terminal in the area, and makes the reception-stop-instruction information transmitted from the specific communication terminal in the area to another communication terminal in the area one by one (i.e., The system control section 1013 directs the CS call control section 1012 to stop transmitting control signals. The CS call control section 1012 stops transmitting control signals after the CS call control section 1012 confirmed that all communication channels were busy) (see paragraph 59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both references to arrive at the claimed invention. A motivation for doing so would have been to provide a seamless communication using a communication channel of another radio base station in a same service area (see paragraph 7).

5. Claims 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uebayashi et al. (Uebayashi), Pub. No. US 20020075817, in view Miyamoto et al (Miyamoto), Pub. No. US 20020002063.

Regarding claim 17, Uebayashi discloses a communication system (see abstract) comprising: a first base station for managing a communication-terminal-in-first-area which exists in a first area, holding a communication channel which can be set for the communication-terminal-in-first-area, and setting the communication channel for the communication-terminal-in-first-area by receiving a setting request for the communication channel from the communication-terminal-in-first-area (i.e., a base station 21 has a service area 31 based on the CDMA-TDD method and a service area 41 based on the CDMA-FDD method. A mobile station 11 is located both in the service area 31 based on the CDMA-TDD method and in the service

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area 41 based on the CDMA-FDD method, then it can make radio communication with the base station 21 based on either the CDMA-TDD method or the CDMA-FDD method) (see page 3, paragraph 47-48); and a second base station for managing a communication-terminal-in-second-area which exists in a second area (i.e., base station 22 has a service area 32 based on the CDMA-TDD method and a service area 42 based on the CMDA-FDD method) (see paragraph 47).

Although Uebayashi discloses a system as described, Uebayashi does not specifically disclose a system wherein the first base station stops receiving the setting request for the communication channel from the communication-terminal-in-first-area, generates notification information which notifies that receiving the setting request for the communication channel has been stopped, and transmits the notification information generated by the first base station to the second base station, and the second base station receives the notification information transmitted from the first base station and transmits the notification information received to the communication-terminal-in-second-area.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place

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of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station control equipment where the level of a reception wave reaching a terminal from a radio base station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84). Thus, one skilled in the art would immediately conceptualize that when the mobile station roams to another area, it will stop requesting communication channel from the base station in the previous area.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

Regarding claim 18, Uebayashi discloses a system (see claim 17 rejection) wherein the first base station is connected to the second base station through a base station control apparatus (see figs. 1 and 4, paragraphs 48 and 53).

Although Uebayashi discloses a system as described, Uebayashi does not specifically disclose a system wherein in a case of generating the notification information, transmits the notification information to the second base station through the base station control apparatus.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the

extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station control equipment where the level of a reception wave reaching a terminal from a radio base station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84). Thus, one skilled in the art would immediately conceptualize that when the mobile station roams to another area, it will stop requesting communication channel from the base station in the previous area.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

Regarding claim 19, Uebayashi discloses a system (see claim 17 rejection) wherein the first base station is connected to a first base station control apparatus and the second base station is connected to a second base station control apparatus which is connected to the first base station control apparatus (i.e., fig. 4 shows a configuration of a base station, which comprises of

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a control station Fig. 1, shows a control station which controls each base station and manages channels used for the radio communication between a mobile station and a base station. Thus, one skilled in the art would immediately conceptualize that each base station, as shown in fig. 1, comprises a control station, which is connected to each other by the control station 51) (see figs. 1 and 4, paragraphs 48 and 53).

Although, Uebayashi discloses a system as described, Uebayashi does not specifically disclose a system wherein in a case of generating the notification information, transmits the notification information to the second base station through the first base station control apparatus and the second base station control apparatus.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station control equipment where the level of a reception wave reaching a terminal from a radio base

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station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

Regarding claim 20, Uebayashi discloses a system (see claim 17 rejection) wherein the second base station can communicate with a base station other than the first base station (see figs. 1 and 4, paragraphs 47-48, and 53).

Although Uebayashi discloses a system as described, Uebayashi does not specifically disclose a system wherein in a case of receiving the notification information transmitted from the first base station, transmits the notification information received to the base stations other than the first base station.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place

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of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station control equipment where the level of a reception wave reaching a terminal from a radio base station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

Regarding claim 21, Uebayashi discloses base station control apparatus which is connected to a plurality of base stations and controls the plurality of base stations (see fig. 1), wherein each of the plurality of base stations has a management area as a management object (i.e., control section 121) (see fig. 4, paragraph 53), holds a communication channel which can be set for a communication terminal in its management area (i.e., the control section is capable of making a communication with a control station through the communication section 124) (see fig. 4, paragraph 53), and when receiving a setting request for the communication channel from the communication terminal in its management area, sets the communication channel for the communication terminal in its management area (i.e., the control station 51 determines and manages the current states of the channels (channels used in each service area, vacant channels, etc.). If the control station receives a request for channel assignment, it assigns a channel taking

the current states of the channels into consideration. The request for channel assignment is issued when a call is made in a service area) (see paragraphs 48 and 53).

Although, Uebayashi discloses an apparatus as described, Uebayashi does not specifically disclose an apparatus wherein the base station control apparatus, in a case of a specific base station having stopped receiving the setting request for the communication channel, detects that the specific base station has stopped receiving the setting request for the communication channel, generates notification information which notifies that the specific base station has stopped receiving the setting request for the communication channel, transmits generated notification information to a base station other than the specific base station, and makes the base station other than the specific base station transmit the generated notification information to the communication terminal in its management area.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station

control equipment where the level of a reception wave reaching a terminal from a radio base station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84). Thus, one skilled in the art would immediately conceptualize that when the mobile station roams to another area, it will stop requesting communication channel from the base station in the previous area.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

Regarding claim 22, Uebayashi discloses a base station control apparatus (see claim 21 rejection) (see fig. 1), wherein the base station control apparatus is connected to another base station control apparatuses which controls at least one base station (i.e., fig. 4 shows a configuration of a base station, which comprises of a control station Fig. 1, shows a control station which controls each base station and manages channels used for the radio communication between a mobile station and a base station. Thus, one skilled in the art would immediately conceptualize that each base station, as shown in fig. 1, comprises a control station, which is connected to each other by the control station 51) (see figs. 1 and 4, paragraphs 48 and 53).

Although, Uebayashi discloses an apparatus as described, Uebayashi does not specifically disclose an apparatus wherein in the case of generating the notification information, transmits a generated notification information to the another base station control apparatuses, and makes the

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another base station control apparatuses transmit the generated notification information to a base station which the another base station control apparatuses controls.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station control equipment where the level of a reception wave reaching a terminal from a radio base station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

Regarding claim 23, Uebayashi discloses a base station control apparatus (see claim 21 rejection) (see fig. 1) wherein the base station control apparatus is connected to another base station control apparatus which controls at least one base station (i.e., fig. 4 shows a configuration of a base station, which comprises of a control station Fig. 1, shows a control station which controls each base station and manages channels used for the radio communication between a mobile station and a base station) (see figs. 1 and 4, paragraph 48 and 53) which sets the communication channel for a communication terminal when receiving a setting request for the communication channel from the communication terminal (i.e., the control station 51 determines and manages the current states of the channels (channels used in each service area, vacant channels, etc.). If the control station receives a request for channel assignment, it assigns a channel taking the current states of the channels into consideration. The request for channel assignment is issued when a call is made in a service area) (see paragraphs 48 and 53)

Although, Uebayashi discloses an apparatus as described, Uebayashi does not specifically disclose an apparatus wherein the base station control apparatus, when one base station which is controlled by the another base station control apparatus stops receiving the setting request for the communication channel, receives notification information from the another base station control apparatus which notifies that the one base station which is controlled by the another base station control apparatus has stopped receiving the setting request for the communication channel, transmits a received notification information to the plurality of base stations, and makes the plurality of base stations transmit the received notification information to the communication terminal in the management area of each base station.

However, Miyamoto discloses a system (see abstract) wherein During the process in which the mobile station 70 moves from the area where the wireless zones 60Z-1 and 60Z-2 overlap with each other to the area belonging only to the wireless zone 60Z-2 without the extinction of the completed call described above, the controlling part 57 provided to the base station controller 50 cooperates with the controlling parts 63-1 and 63-2 provided to the radio base stations 60-1 and 60-2 on the basis of the channel control procedure. In such a channel control process, the controlling part 57 allots a vacant radio channel (hereinafter called the "second radio channel") in the wireless zone 60Z-2 corresponding to the new visit-zone in place of the first radio channel allotted previously, and instructs the controlling part 63-2 provided to the radio base station 60-2 to start transmission of the second radio channel through the communication link 53. The objects described above can be further accomplished by base station control equipment where the level of a reception wave reaching a terminal from a radio base station forming a new visit-zone is notified by the terminal through the radio base station forming the former visit-zone (see paragraphs 37-38, and 84).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both teachings to arrive at the claimed invention. A motivation for doing so would have been to suppress and avoid unnecessary interference and jamming resulting from excessive transmitting power of a radio channel where a radio base station forming a new visit-zone is to execute transmission (paragraph 54).

6. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa and Onodera in further view of Longoni, Pub. No. US 20040213193.

Regarding claim 8, the combination discloses a base station as described above (see claim 7 rejection).

Although the combination discloses a base station as described above, the combination does not specifically disclose a base station wherein the control information generating part generates the control information including a unique word, the control information control part gives an instruction to the control information generating part to change at least a part of the unique word, and the control information generating part generates the control information by changing at least a part of the unique word, based on the instruction of the control information control part.

However, Longoni discloses a base station (paragraph 13) wherein the coding format may be selected in a set-up phase of the dedicated channel based on corresponding set-up parameters of the dedicated channel. Thus, the structure of the transport frame can be changed when a change of the channel parameters of the dedicated channel has been detected (paragraphs 30 and 47). Thus, when the coding format is changed (e.g., by changing the length of the frame, which will render the frame length unique (i.e., unique word), the mobile terminal, which is no longer receiving control information is unable to recognize the control information.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings as disclosed to arrive at the claimed invention. A motivation for doing so would have been to allow an efficient usage of transmission resources (see abstract).

Regarding claim 9, the combination discloses a base station as described above (see claim 7 rejection).

Although the combination discloses a base station as described above, the combination does not specifically disclose a base station wherein the control information generating part generates the control information including a unique word, the control information control part gives an instruction to the control information generating part to change at least a part of the unique word, and the control information generating part generates the control information by changing at least a part of the unique word, based on the instruction of the control information control part.

However, Longoni discloses a base station (paragraph 13) wherein the coding format may be selected in a set-up phase of the dedicated channel based on corresponding set-up parameters of the dedicated channel. Thus, the structure of the transport frame can be changed when a change of the channel parameters of the dedicated channel has been detected (paragraphs 30 and 47). Thus, when the coding format is changed (e.g., by changing the length of the frame, which will render the frame length unique (i.e., unique word), the mobile terminal, which is no longer receiving control information is unable to recognize the control information.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings as disclosed to arrive at the claimed invention. A motivation for doing so would have been to allow an efficient usage of transmission resources (see abstract).

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa, Onodera, and Longoni, in further view of Ishii, Pub. No. US 20040203734.

The combination discloses a base station as described above (see claims 7-9 rejections).

Although the combination discloses a base station as described, the combination does not specifically disclose a base station wherein the control information generated has LCCH (Logical Control CHannel).

However, Ishii discloses a base station wherein the control channel is composed of LCCH frames (see page 6, paragraph 90).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings to arrive at the claimed invention. A motivation for doing so would have been to allow an efficient usage of transmission resources (see Longoni's abstract).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Louis Desir whose telephone number is 703-605-4312. The examiner can normally be reached on (571) 272-7799.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Pierre-Louis Desir
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07/23/2005

JEAN GELIN
PRIMARY EXAMINER

